

**WE CLAIM:**

1            1.        A method of fabricating an ion optic device comprising the steps of: shaping a  
2        ceramic material into at least a portion of the ion optic device; and  
3            covering at least a portion of the shaped ceramic material with at least one material  
4        selected from a group consisting of a conductive material and a resistive material.

2. The method of claim 1 further comprising the step of removing a portion of the covering material.

3. The method of claim 1 wherein the ceramic material is a material selected from the group consisting of a ceramic, a glass, and a glass-ceramic.

4. The method of claim 1 wherein the conductive material is metal.

1            5.            The method of claim 2 wherein the step of shaping a ceramic material  
2            comprises providing a substantially cylindrical bore in the ceramic material; and  
3                            wherein the step of removing a portion of the covering material comprises  
4            removing at least two portions of the covering material on opposing surfaces of the interior of  
5            the bore to create at least two separate, opposing areas of covering material.

1           6.       The method of claim 2 wherein the step of shaping a ceramic material  
2 comprises providing a cavity in the ceramic material; and  
3                   wherein the step of removing a portion of the covering material comprises  
4 removing at least one portion of the covering material circumscribing the interior perimeter  
5 of the cavity to create at least two substantially parallel bands of conductivity on an inner  
6 surface of the cavity.

7           7.       The method of claim 6 wherein the cavity extends through the ceramic  
8 material; and  
9                   further comprising the step of attaching a conductive grid over one end of the cavity.

10          8.       The method of claim 6 further comprising the step of separating the ceramic  
11 material into a first portion and a second portion; and  
12                   joining the first portion and the second portion back together with a  
13 conductive grid therebetween.

14          9.       The method of claim 2 wherein the step of shaping a ceramic material  
15 comprises providing a cavity having a blind end in the ceramic material;  
16                   wherein the step of covering at least a portion of the shaped ceramic material  
17 with at least one covering material comprises covering at least a portion of the blind end in  
18 the interior of the cavity with a conductive material.

1           10.    An ion optic device for manipulating ions in a vacuum, comprising:  
2                   a ceramic substrate having a cavity therein; and  
3                   a conductive coating on at least a portion of an interior surface of the cavity,  
4   the conductive coating provided for receiving an applied voltage to act upon the ions.

1           11.    The device of claim 10 wherein the cavity is a substantially cylindrical bore;  
2   and  
              wherein the conductive coating is provided in at least two separate areas on opposing  
surfaces of the bore.

1           12.    The device of claim 11 wherein the at least two separate areas of conductive  
coating are separated by secondary bore having an axis parallel to the central bore.

1           13.    The device of claim 10 wherein the cavity has a blind end and wherein the  
2   blind end is coated with the conductive coating.

1           14.    The device of claim 10 wherein the conductive coating is provided in at least  
2   two separate bands circumscribing the cavity.

1           15.    The device of claim 10 wherein the cavity has an open end and the device  
2   further comprises a conductive grid attached to the ceramic substrate over the open end.

1           16.    The device of claim 10 wherein the ceramic substrate is provided in at least  
2   two portions and a conductive grid is provided between the two portions.

1           17.    The device of claim 10 wherein the ceramic is a glass-ceramic.

- 1           18.    The device of claim 10 wherein the cavity has an open end and the device  
2    further comprises an electrode member attached to the ceramic substrate over the open end.

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